



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/738,855	12/18/2000	Toshiyuki Toyoshima	400846	1677

23548 7590 10/07/2003

LEYDIG VOIT & MAYER, LTD  
700 THIRTEENTH ST. NW  
SUITE 300  
WASHINGTON, DC 20005-3960

EXAMINER

CHANG, RICK KILTAE

ART UNIT	PAPER NUMBER
----------	--------------

3729

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

NK

<b>Office Action Summary</b>	Application No. 09/738,855	Applicant(s) TOYOSHIMA ET AL.	
	Examiner Rick K. Chang	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 4,5 and 7-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Newly submitted claims 11-20 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: heating step heats the first and second insulating layers to diffuse the reaction components from the first insulating layer into only a part of the second insulating layer at an interface of the first and second insulating layers; however, the original invention failed to claim this step as recited above.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 11-20 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chun (US 6,486,058) in view of Shinogi et al (US 6,479,900).

Chun discloses the claimed invention in Fig. 2.

Chun fails to disclose filling the vias with conductive material.

Shinogi discloses filling the vias with conductive material (Fig. 4).

Art Unit: 3729

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chun by filling the via with conductive material, as taught by Shinogi, for the purpose of electrically communicating between different circuit layers.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chun (US 6,486,058)/Shinogi et al (US 6,479,900) as applied to claim 1 above, and further in view of Rokugawa (US 6,434,819).

Chun/Shinogi fail to disclose epoxy resin.

Rokugawa discloses epoxy resin (16) thereby easily cured by heating and irradiated by a laser beam to form vias or recesses.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chun/Shinogi by providing epoxy resin, as taught by Rokugawa, for the purpose of easily cured by heating and irradiated by a laser beam to form vias or recesses.

5. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chun (US 6,486,058)/Shinogi et al (US 6,479,900)/Rokugawa (US 6,434,819) as applied to claims 1-2 above, and further in view of Tomlin et al (US 5,773,546).

Chun/Rokugawa/Rokugawa fail to disclose a water-soluble resin.

Tomlin discloses a water-soluble resin thereby forming a water viscosifying copolymer that is not flammable and non-toxic.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chun/Rokugawa/Rokugawa by providing a water-soluble resin, as taught by Tomlin, for the purpose of forming a water viscosifying copolymer that is not flammable and non-toxic.

***Response to Arguments***

6. Applicant's arguments filed 9/23/03 have been fully considered but they are not persuasive.

The certified English translation is not a literal translation of the U.S. application because it lacks Fig. 7 (Evaluation Board A vs. Evaluation Board B) and Tables 4 and 5.

***Interviews After Final***

7. Applicant note that an interview after a final rejection will not be granted unless the intended purpose and content of the interview is presented briefly, in writing (the agenda of the interview must be in writing) to clarify issues for appeal requiring only nominal further consideration. Interviews merely to restate arguments of record or to discuss new limitations will be denied. See MPEP 714.13 and 713.09.

***Conclusion***

8. Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3729

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (703) 308-4784. The examiner can normally be reached on 5:30 AM to 1:30 PM, Monday through Thursday.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

A handwritten signature in black ink, appearing to be 'Richard Chang', written over a horizontal line.

**RICHARD CHANG  
PRIMARY EXAMINER**

RC  
October 6, 2003